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ELECTRICAL INSPECTION BRANCH

QUARTERLY BULLETIN

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CANADIAN ELECTRICAL CODE - SIXTH EDITION

The new edition of the Canadian Electrical Code is now available at the Edmonton Office and at all District Inspection Offices. This is a publication of the Canadian Standards Association and the price is $1.25 postpaid. There is also available a booklet comparing the Fifth and Sixth Editions of the Code and a summary of the Rule changes which electrical contractors will no doubt find very useful. The price of this booklet is 25¢.

If copies of the above are requested by mail please send your remittance to the Edmonton Office, as our District Offices do not have adequate facilities for mailing.

Code books cannot be charged to a Contractor's Permit Account. Code books will not be sent out C.O.D.

The effective date of this Code Book will be announced later, but in any case will not be later than April 1st, 1954. Rules covering new equipment and materials not covered in the Fifth Edition may be used immediately.

CIRCUIT BREAKERS AND SERVICE SWITCHES

Under the exception as provided in Rule 404 (a) of the Canadian Electrical Code, branch circuit breakers may be used without an approved main service box. The use of the circuit breakers as permitted under these exceptions is limited, however, to installations where approved circuit breakers are used in each branch circuit, and grouped in one readily accessible cabinet, with the total connected load not exceeding 100 amperes.

A problem arises particularly when a large residence is sub-divided into apartments, with the probability of having separate meters. The following installation methods are acceptable:-

1. Install a hot gutter on which are mounted up to six meter-trim switches to feed various panels throughout the building.
2. For small additions to existing installations increase the size of the existing circuit breaker panel and service to accommodate the additional load. Without a main service switch this arrangement will allow a maximum of eight circuits and a range feeder but makes no provision for a second meter.
3. For small residences having a basement or upstairs suite divide the service at the plug-in meters or "A" boxes and bring separate service wires from each meter into the building to circuit breaker panels located not more than five feet apart. This is only acceptable where the total number of circuit breakers does not exceed ten in number.

PARALLELING SERVICE AND FEEDER CONDUCTORS

Installations of a large service or feeder may consist of two wires paralleled in each phase. The limits to this substitution are as follows:-

1. The parallel conductors in each phase must not be smaller than ~~1/10~~ 1/0 B.&S. Gauge.
2. These conductors should be of identical sizes and length.
3. Suitable terminal blocks, having separate lugs for each conductor, shall be provided to insure that the division of current is as equal as possible.

GROUNDING PORTABLE ELECTRIC TOOLS

Another fatal accident has occurred in Alberta, caused by failure to provide grounding for a portable electric tool. In this case it was an electric screw driver.

It is imperative that three wire polarized outlets be provided at any location where portable tools may be used, such as temporary services for construction, home and farm workshops, commercial garages, etc. It is equally important that the three wire caps that are supplied with the tool are not removed or altered to fit a two wire receptacle.

FUSING OF CONTROL CIRCUIT TRANSFORMERS

Small transformers supplying low energy power and signal circuits are manufactured in two types, current limiting and non-current limiting. In the first type a dead short may be placed across the secondary terminals for an indefinite time without damaging the transformer and no fusing of the secondaries is necessary.

For the non-current limiting type, fuses must be provided on the secondary side of the transformer. These may be a standard plug fuse of one to five amperes, depending on the voltage of the secondary circuit. See Rule 1003 for the size of fuses required.

CORRECTION

In the April 1953 Quarterly Bulletin an item was published dealing with the size of service conductors required for circuit breaker panels in residential occupancies. The Table of demand factors is given in the Sixth Edition (Table 13) and it should be noted that these demand factors apply only to single family dwellings, and not to residential occupancies in general. A separate table is listed in the Code for apartment buildings or for multi-family dwellings. For this purpose a residence containing a basement suite is considered as a multi-family dwelling.

SE CABLE NEUTRALS

In some of the newer types of circuit breaker panels it is difficult to bring the stranded neutral wire around to the neutral bar without touching the main bus bar terminals. For this reason the neutral strands should be taped with rubber and friction tape where this type of service panel is used with S.E. Cable.

WIRING IN BUILDINGS USED FOR THE MANUFACTURE, STORAGE, AND HANDLING OF LIQUIFIED PETROLEUM GASES

The definition of L.P. gas is intended to include propane, propylene, butanes (normal and iso-) and butylenes. The buildings concerned are classed as Class 1, Group D, locations and the wiring shall be installed accordingly. Where the building is unheated and of an open type construction similar to a gasoline bulk station then the wiring may be installed as if the building was being used for bulk handling of gasoline; that is, with vapour-proof lighting equipment above a level of 5 feet from the floor. This permission is given assuming that all gases involved are heavier than air. If, for instance, free hydrogen is included in the gases present , a purged conduit system would be required for the electrical installation.

NON-METALLIC SHEATHED CABLE

During the last two or three years N.M.S. Cable, having a plastic moisture-proof acid resisting covering, has been available. This cable does not comply with the requirements of C.S.A. Specification 48, on N.M.S. Cables. It was accepted on the basis of tests made at the Approvals Laboratories and subject to field experience. Sufficient experience has now been obtained in the use of this cable and the Approvals Laboratories have drawn up some tentative requirements, which it is hoped will be included in the Specification. The Laboratories advised the manufacturers that cables approved after October 15th, 1953, would need to comply with the tentative requirements, and samples should be submitted prior to that date.

The above procedure has caused some misunderstanding with some manufacturers and distributors and there have been persistent rumors that this tupe of cable would be unacceptable after October 15th, 1953. This understanding is incorrect and cables manufactured during the last two or three years, which have passed the laboratory test and been found acceptable in the field will continue to be accepted until cable meeting the new tentative requirements is readily available.

Further to this we have been assured that the manufacture of the existing types need not necessarily be discontinued on October 15th, 1953, providing the manufacturer concerned has submitted new samples to meet the tentative requirements. If necessary it is understood that the dead line of October 15th, 1953, will be extended if the manufacturer having approval of a type of this cable at the present time is not in a position to immediately manufacture cable meeting the new requirements. Any statements made by distributors or salesmen that this type of cable will not be acceptable are entirely an error, as the steps being taken by the Laboratory at the present time are intended only to establish certain standard requirements for this type of cable.